Development of a Water Quality Clean Up Plan

South Fork Holston River Watershed

November 10, 2022 1st Public Meeting

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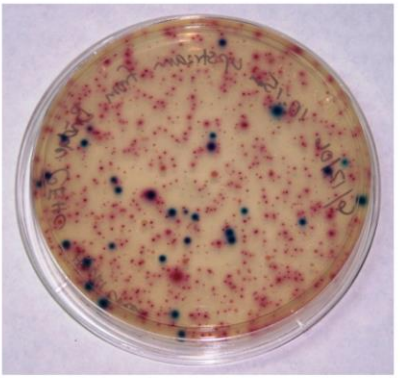
Why are we here tonight?

Too much **bacteria (E.coli)** in the watershed

- Human health concern
- Indicator of pathogens in the water
- Impacts on livestock health



Tonight's meeting:

- Overview of VA's water quality process
- Review TMDL study…Clean Up Plan
- Next Steps- How to get involved & Timeline

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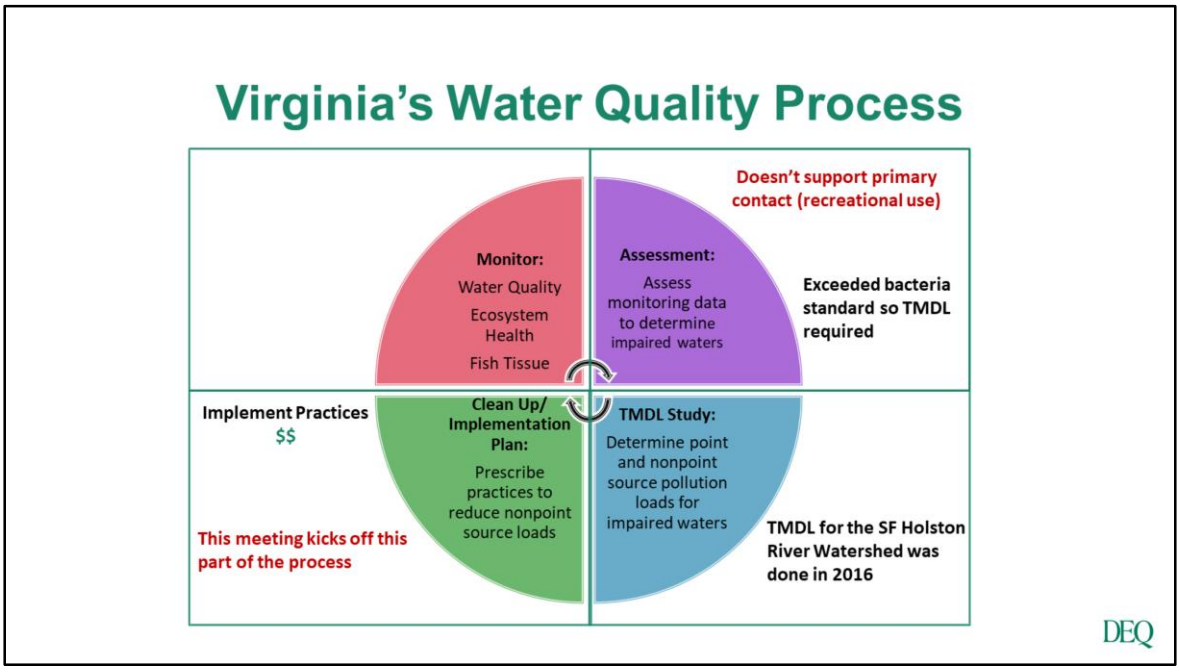

Assessment: The Clean Water Act (CWA) that became law in 1972 requires that all U.S. streams, rivers, and lakes meet certain water quality standards. The CWA also requires that states conduct monitoring to identify waters that are polluted or do not otherwise meet standards. Through this required program, the state of Virginia has found that many stream segments do not meet state water quality standards for protection of the six beneficial uses:

1- recreation/swimming (boating/swimming)
2- aquatic life
3- wildlife
4- fish consumption
5- shellfish consumption
6- public water supply (drinking)

TMDL Study: When streams fail to meet standards, the stream is "listed" in the current Section 303(d) report as requiring a Total Maximum Daily Load (TMDL). Section 303(d) of the CWA and the U.S. Environmental Protection Agency's (EPA) Water Quality Management and Planning Regulation (40 CFR Part 130) both require that states develop a Total Maximum Daily Load (TMDL) for each pollutant.

Clean Up/IP: Once a TMDL is developed and approved by EPA, measures must be taken to reduce pollution levels in the stream. Virginia's 1997 Water Quality Monitoring, Information and Restoration Act (WQMIRA) states in section 62.1-44.19:7 that the *"Board shall develop and implement a plan to achieve fully supporting status for impaired waters".* The Implementation Plan (IP) describes control measures, which can include the installation of best management practices (BMPs), which should be implemented in a staged process. Through this process, states establish water-quality based controls to reduce pollution and meet water quality standards.

What is a TMDL?

Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.

A TMDL includes:

- Source assessment
- Modeling
- Allocations & Margin of Safety

TMDL= Waste Load Allocation (point source) + Load Allocation (nonpoint source) + Margin of Safety

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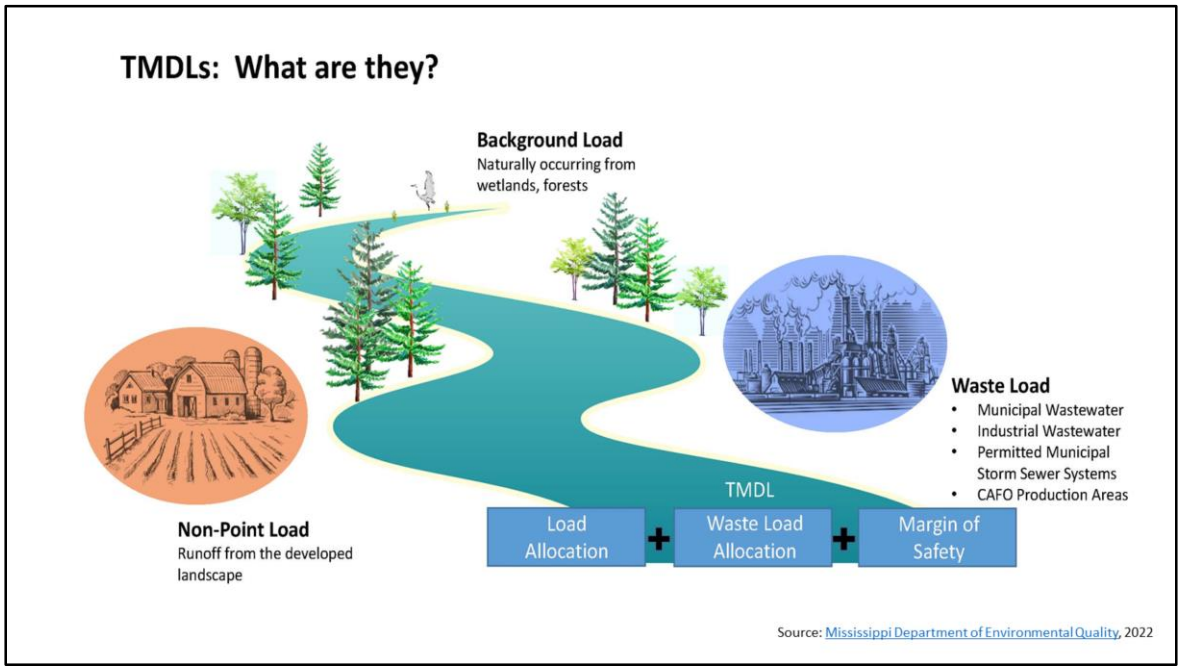
What is a TMDL? It's a "pollution budget" for a stream; that is, it sets limits on the amount of pollution that a stream can tolerate and still maintain water quality standards

A TMDL Includes:

- **Source Assessment (in this case, looking at sources of bacteria)** for Point Sources (Damascus WWTP, USDA Forest Service Grindstone Rec Area, Holston High School, 7 single family home permits) and NonPoint Sources (residential failing septic, sewage overflows, agriculture, pets and wildlife)
- **Modeling**- tool that allows simulating the interaction between the land surface and subsurface (precipitation) and the quantities of various bacteria sources by location (accounts for bacteria from NPS and point sources)
- **Allocations**-
  - Waste Load Allocation (WLA)- (permitted) portion of a receiving water's loading capacity that is attributed to point sources
  - Load Allocation (LA)- (non-permitted) portion of a receiving water's loading capacity that is attributed to nonpoint sources or to natural background sources.
- **Margin of Safety**- to account for uncertainty in modeled output to ensure that the modeled loads do not underestimate the actual loadings that exist in the watershed

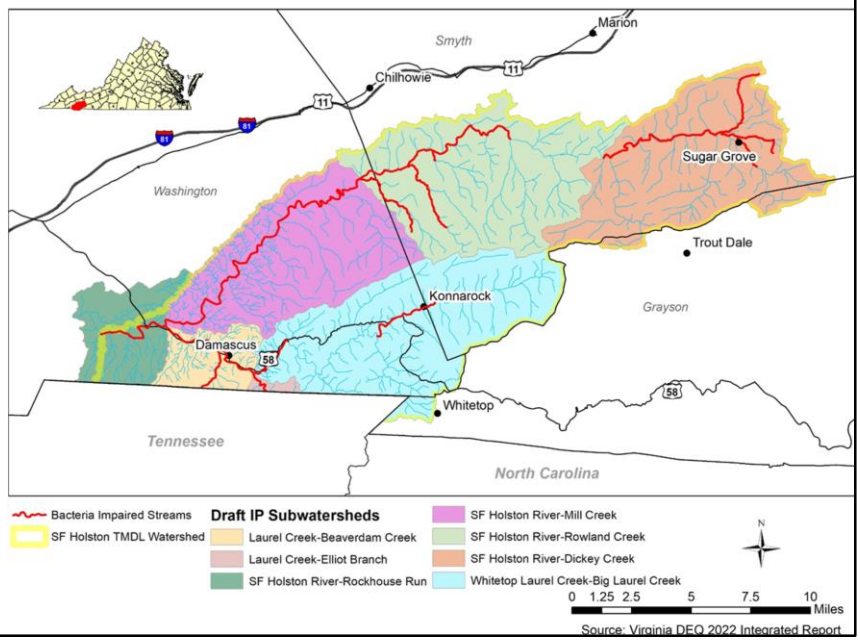


Load allocation= nonpoint sources
Waste load allocation= point sources

Review of the TMDL study:

Impairments

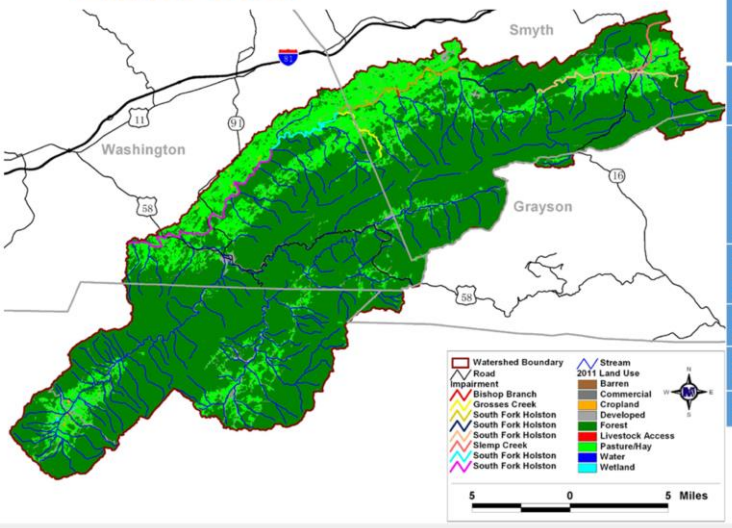
Impaired Streams	Initial Listing Year
Slemp Creek	2010
Cressy Creek	2022*
SF Holston	2010
SF Holston	2002
Saint Clair Creek	2016*
Bishop Branch	2010
Grosses Creek	2010
Whitetop Laurel	2012
SF Holston	2006
SF Holston	2004
Laurel Creek	2022*
Beaverdam Creek	2022*



12 impaired segments within the SF Holston watershed

Review of the TMDL study:

Land Use



Land use	Area	
	%	Acres
Forest	76	150,340
Agriculture (pasture/hay, livestock access)	19	38,631
Developed, commercial	3	6,572
Water	1	2,119
Cropland	0.2	407
Barren, wetland	0.1	285

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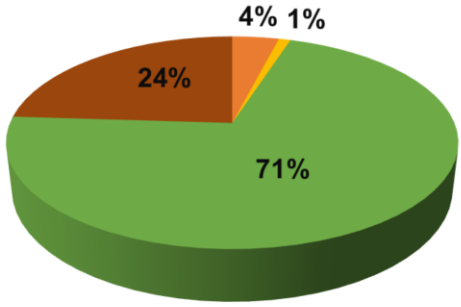
Review of the TMDL study:

Bacteria Source Assessment



- Humans (straight pipes and failing septic systems): 4%
- Pets: 1%
- Agriculture (pasture/hay, livestock access): 71%
- Wildlife: 24%

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Review of the TMDL study:
Bacteria Load Reductions

Goal	Straight Pipes	Livestock (Direct)	Agriculture (Pasture/Hay/ Cropland)	Residential*
Stage 1	100%	47%	44%	39%
Stage 2 (Delisting)	100%	93%	88%	77%

*Includes both human (failing septic) and pet loads…will differentiate in the Clean Up Plan

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Based on Table 5.2, the reductions recommended from residential (39% and 77%) include both human and pet loads. (Let's hope they can be achieved through failing septic systems, without having to reduce pet loads!)

What is a Clean Up Plan… aka Implementation Plan (IP)?

What the plan is….

- **What**: Corrective Actions & Outreach Activities
- **Where**: Watershed Area
- **When**: Timeline for implementation actions
- **Why**: Measureable Goals
- **Who**: Partners, Funding
- **How much**: Costs

Tells us "how" to improve water quality for nonpoint sources

What the plan isn't…

- A regulatory tool for non point source pollution
- A static document

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Required by Virginia's 1997 Water Quality Monitoring, Information and Restoration Act (WQMIRA)

Road map to water quality improvement

Participatory process

What is your role in developing the Plan?

IPs are only as good as the information received/assessed

Need your help to know what's realistic… What are the real needs & interests?

Provide comments/feedback on:

- Land use practices
- Failing septic systems and straight pipes
- Livestock, wildlife and pet population estimates
- Are there particular management strategies that will work well in this area?
- Are there strategies that should be avoided?

Join the Working Group!

Recommend outreach activities & funding sources

Identify potential partner organizations

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Join the Working Group! (Time commitment: 1-2 meetings and review draft plan)

- Provide input based on local interest/need
- Share ideas to maximize landowner participation
- Review draft of the Clean Up Plan
- Plan for the final public meeting

Timeline/Next Steps for the Clean Up Plan process

	Tentative Date
First Public Meeting	**November 10, 2022** (Public comment period November 10- December 12, 2022)
Working Group Meetings	
# 1	January 2023
# 2	February/March 2023
Final Public Meeting	**April 2023** (Public comment period 30 days after Final Public Meeting)
EPA Approval	June/July 2023? Available for DEQ 319 funding in 2024?

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Submit comments to:
(Include name, organization (if any), mailing address and telephone number)

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Questions?

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